

WHAT IS CLAIMED IS:

- 1 1. A heat sink comprising:
2 a thermally conductive core that includes an outer surface; and
3 a plurality of helical fins extending from the outer surface of the core.
- 1 2. The heat sink of claim 1 wherein the core is a rod.
- 1 3. The heat sink of claim 1 wherein helical fins spiral around the thermally
2 conductive core at a substantially uniform pitch.
- 1 4. The heat sink of claim 1 wherein the helical fins have a similar width.
- 1 5. The heat sink of claim 1 wherein the heat sink includes at least 5 helical fins.
- 1 6. The heat sink of claim 1 wherein the core includes a top surface and a bottom
2 surface and the helical fins includes opposing edges, at least one of the opposing
3 edges being aligned with at least one of the top and bottom surfaces of the core.
- 1 7. The heat sink of claim 1 wherein the core is cylindrical.

1 8. A heat sink comprising:
2 a thermally conductive core that includes an outer surface and a longitudinal
3 axis; and
4 a plurality of helical fins extending from the outer surface of the core and
5 spiraling around the longitudinal axis of the thermally conductive core, the helical fins
6 being oriented at an angle substantially between 30 and 60 degrees relative to the
7 longitudinal axis of the thermally conductive core.

1 9. The heat sink of claim 8 wherein the helical fins are oriented at an angle of
2 about 45 degrees relative to the longitudinal axis of the thermally conductive core.

1 10. The heat sink of claim 8 wherein the core is a cylindrical rod.

1 11. The heat sink of claim 8 wherein the helical fins spiral around the thermally
2 conductive core at a substantially uniform pitch.

1 12. An electronic assembly comprising:
2 a substrate;
3 an integrated circuit mounted on the substrate; and
4 a heat sink thermally coupled to the integrated circuit, the heat sink including
5 a thermally conductive core having an outer surface, and a plurality of helical fins
6 extending from the outer surface of the core.

1 13. The electronic assembly of claim 12 further comprising a fan near the heat
2 sink.

1 14. The electronic assembly of claim 13 wherein the fan has a longitudinal axis
2 and the heat sink has a longitudinal axis, the longitudinal axis of the fan being
3 substantially aligned with the longitudinal axis of the heat sink.

1 15. The electronic assembly of claim 14 wherein the helical fins are oriented at an
2 angle substantially between 30 and 60 degrees relative to the longitudinal axis of the
3 heat sink, and the fan includes an impeller having a plurality of blades that create an
4 airflow as the impeller rotates, the airflow generated by the plurality of blades being
5 oriented at substantially the same angle relative to the longitudinal axis of the fan as
6 the angle of the helical fins is relative to the longitudinal axis of the heat sink.

1 16. The electronic assembly of claim 12 wherein the integrated circuit is a
2 processor and the substrate is a motherboard.

1 17. A method of removing heat from an integrated circuit, the method comprising:
2 thermally coupling a heat sink to the integrated circuit, the heat sink including
3 a thermally conductive core having an outer surface, and a plurality of helical fins
4 extending from the outer surface of the core; and
5 positioning a fan near the heat sink to generate airflow over the helical fins of
6 the heat sink.

1 18. The method of claim 17 wherein the helical fins are oriented at an angle
2 substantially between 30 and 60 degrees relative to a longitudinal axis of the heat sink,
3 and wherein positioning a fan near the heat sink includes orienting the fan to generate
4 an airflow that is at substantially the same angle relative to the longitudinal axis of the
5 heat sink as the angle of the helical fins is relative to the longitudinal axis of the heat
6 sink.

1 19. The method of claim 18 wherein positioning a fan near the heat sink includes
2 aligning a longitudinal axis of the fan with the longitudinal axis of the heat sink.

1 20. The method of claim 17 wherein thermally coupling a heat sink to the
2 integrated circuit includes thermally coupling the thermally conductive core of the
3 heat sink to the integrated circuit.